Carolina Soil & Septic Consulting, PLLC

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NC Licensed Soil Scientist, SC Professional Soil Classifier,
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Proposed Design for a 25% Reduction Septic System using Gravity distribution for a 5 bedroom single family residence on Lot 24 of McCrary Woods Subdivision, 310 McCrary Rd, in Mooresville, Iredell County, North Carolina.

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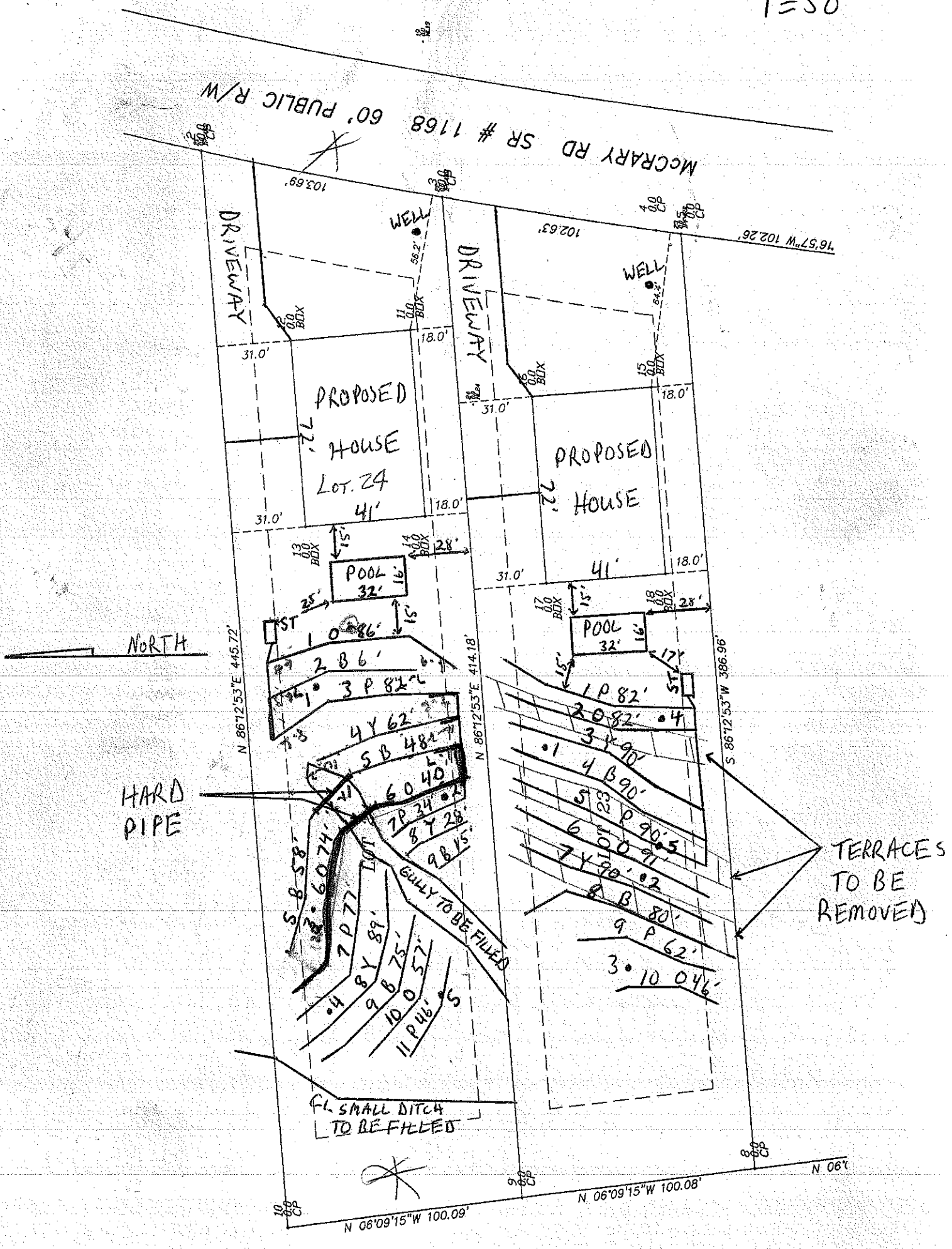
July 28, 2016
Design By: Adrian L. Pruett



INFORMATION FOR INSTALLER:

- The permit should be read very carefully prior to submitting bid. The following are details that must be considered along with all other considerations.
- Tanks shall be approved by NC DHHS, and certification supplied by the manufacturer.
- All tanks shall be properly back filled and compacted to prevent slump at a later date.
- The installer is responsible for final grades and returning that grade to original, with exception of added structural features.
- The supply trench shall be compacted to eliminate any cavities left during initial fill placement.
- Installation of the system shall be during dry conditions in order to protect the soil structure.
- All fittings shall be pressure rated fittings.
- All joints shall be cleaned with PVC pipe cleaner and a heavy bodied glue applied to weld all joints.
- Where required by the county health department, post installation inspections by the designer must be scheduled 5 week days in advance.
- Trenches shall be carefully excavated so the bottom has no more than 1/4"fall in 10 feet with no high or low areas within. If high or low areas do exist after trench excavation, high areas should be removed rather than filling in low areas. Do not over excavate trenches! Any fine grading should be completed by hand with a rake and shovel, leaving no loose material.
- All pipe openings in the tanks shall be properly grouted. This also applies to the joints around the riser.
- Earth dams, constructed of relatively impervious material, shall be installed at the beginning and end of each lateral to prevent unwanted lateral water movement.
- No heavy equipment shall be used on the field during or after installation. The use of a small loader (i.e. Bobcat) or a trencher (i.e. Ditch Witch 2300/2310) may be used for installation.
- Elevations at pin flag locations should be checked by the installer prior to beginning trenches to insure accuracy.
- If septic tank risers are used they should be a minimum of 6" above finished grade or within 6" of final grade if buried.
- Design precludes use of foundation drains on the residence.
- System is specified as an Accepted 25% Reduction Gravity installation.
- Repair is specified as 26" trench bottom PPBPS Low Pressure installation.
- Trench width is specified as 36" wide, rake and lime all trench sidewalls
- **If grading for slab foundation is utilized do not grade/create greater than 2 ft of elevation difference within 15 ft of any component of the septic or repair. If back filling do not backfill over any initial or repair septic line.**

1" = 50'


MCCRARY RD SR # 1168 60' PUBLIC R/W
DRIVEWAY
DRIVEWAY
WELL
WELL
PROPOSED HOUSE LOT. 24
PROPOSED HOUSE
POOL 32' 16'
POOL 32' 16'
NORTH
HARD PIPE
TERRACES TO BE REMOVED
GULLY TO BE FILLED
FL. SMALL DITCH TO BE FILLED
N 86°12'53"E 445.72'
N 86°12'53"E 414.18'
S 86°12'53"W 386.96'
N 06°09'15"W 100.09'
N 06°09'15"W 100.08'
31.0'
18.0'
41'
72'
102.69'
102.63'
56.2'
84.4'

OWNER INFORMATION

Owner:	HNF Builders LLC
	Caleb Hill
Address:	6514 Marion Lavern Rd
	Huntersville, NC 28078
Phone:	704-306-6676
County:	Iredell
Location:	McCRARY WOODS LOT 24, 310 McCRARY RD
Source of Wastewater Flow:	5 Bedroom Single Family Residence
Estimated Gallons Per Day Flow:	600
System Flow:	NA

25% GRAVITY DESIGN INFORMATION

Drainfield Design Flow (gpd):	546
Loading/Soil Application Rate (gpd/ft.^{2}):	0.275
Depth of Gravel in Trench:	NA (25% reduction)
Gravel Size:	NA (25% reduction)
Total Lateral Length From Layout:	546
Total Lateral Length Required:	545.45
Trench Depth:	29 in. Lowside
Trench Width:	36 in.
TOTAL AREA TRENCH BOTTOM:	1638
Trench Spacing on Center:	9 ft.
Septic Tank Size:	1500 gal.
Estimated Supply Line Length:	8
Supply Line Diameter:	3 in. SCH 40 PVC
Supply Line Volume:	2.88
Dosing Volume:	NA
Supply Manifold:	SERIAL DISTRIBUTION
Additional Comments:	Soil suitability was performed by Adrian L. Pruett LSS

McCRARY WOODS LOT 24, 310 McCRARY RD
FIELD LAYOUT SPECIFICATIONS

LAYOUT FOR 5 BEDROOM RESIDENCE — July 28, 2016

LINE #	FLAG COLOR	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM			NA		
HOUSE CRN		NA	NA		
P. TANK		NA	NA		
1	*ORANGE*	*NA*	*NA*	*87*	*86*
2	*BLUE*	*NA*	*NA*	*66*	*62*
3	*PINK*	*NA*	*NA*	*85*	*82*
4	*YELLOW*	*NA*	*NA*	*95*	*62*
5	*BLUE*	*NA*	*NA*	*48*	*48*
5	*BLUE*	*NA*	*NA*	*58*	*58*
6	*ORANGE*	*NA*	*NA*	*40*	*40*
6	*ORANGE*	*NA*	*NA*	*74*	*74*
7	*PINK*	*NA*	*NA*	*34*	*34*
7	PINK	NA	NA	77	77
8	YELLOW	NA	NA	28	28
8	YELLOW	NA	NA	89	89
9	BLUE	NA	NA	15	15
9	BLUE	NA	NA	75	75
10	ORANGE	NA	NA	57	57
11	PINK	NA	NA	46	46
			Total	**974**	**933**

	LINE LENGTH	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
System	*546*	*ACCEPT.*	*0.275*	*25% RED.*	*GRAVITY*
Repair	387	*MOD.*	0.275	PPBPS	LOW PRESSURE

Notes:
** TBM Is Not Required.
**All measures in feet
**Nitrification lines are demonstrated on contour via colored pin flags

Comments: **Small gully must be filled with clay and compacted, keep a minimum of 2 ft off of filled gully with septic lines.**
Small drainage ditch at rear of property must also be filled with clay and compacted
Proposed pool is flagged in blue pin flags
Keep maximum distance from pool with setic tank and minimum of 15 ft with drainlines
Iredell County has CS&SC's permission to change septic tank location and distribution type

DOSING CALCULATIONS

Location McCRARY WOODS

Lot No: 24

No. of Bedrooms	5	
Design Flow	600	$^{gal}/_{day}$
LTAR	0.275	$^{gal}/_{ft^2\ day}$
25% RED. Expansion? (YES OR NO)	YES	
Supply Line Length	8	ft.
Supply Line Volume	2.88	gal.
Required Feet of 25% RED. Line	545.45455	ft.
Amount of Line from Layout	546	ft.
Gallons per Minute	NA	$^{gal}/_{min}$
Septic Tank Capacity	1500	gal.
Minimum Septic Tank Capacity	1500	gal.
Lateral Line Volume	356.538	gal.

DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC HEALTH, ENVIRONMENTAL HEALTH SECTION
ON-SITE WATER PROTECTION BRANCH

PROPERTY ID #: 4637156723
COUNTY: Iredell

SOIL/SITE EVALUATION
***for* ON-SITE WASTEWATER SYSTEM**
(Complete all fields in full)

OWNER: HNF Builders, LLC APPLICATION DATE 7/29/16
ADDRESS: 6514 Marion Lavern Rd., Huntersville, NC 28078 DATE EVALUATED: 7/27/16
PROPOSED FACILITY: 5 Bedrooms PROPOSED DESIGN FLOW (.1949): 600 GPD PROPERTY SIZE: 0.99 ac.
LOCATION OF SITE: 310 McCrary Rd., Moorsville, NC 28117 Lot 24 PROPERTY RECORDED: Yes
WATER SUPPLY: X Private ☐ Public ☐ Well ☐ Spring ☐ Other
EVALUATION METHOD: X Auger Boring ☐ Pit ☐ Cut TYPE OF WASTEWATER: X Sewage ☐ Industrial Process ☐ Mixed

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941) .1941 STRUCTURE/ TEXTURE	SOIL MORPHOLOGY (.1941) .1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	OTHER PROFILE FACTORS .1943 SOIL DEPTH	OTHER PROFILE FACTORS .1956 SAPRO CLASS	OTHER PROFILE FACTORS .1944 RESTR HORIZ	PROFILE CLASS & LTAR
B 1	HS/LSS 9%	0-6	FILL		N/A	48"	N/A	N/A	PS
		6-17	B C WFSBK	FR, SS, SP, SEXP					0.3 GPD/SQFT
		17-48	R C WFSBK	FR, SS, SP, SEXP					
B 2	LSS 9%	0-8	FILL		N/A -FEW MN -FEW SAP	48"	N/A	N/A	PS
		8-18	B C WFSBK	FR, SS, SP, SEXP					0.275 GPD/SQFT
		18-44	R C WFSBK	FR, SS, SP, SEXP					
		44-48	R CL WFSBK	FR, SS, SP, SEXP					
B 3	LSS 10%	0-8	RB C/CL WFSBK	FR, SS, SP, SEXP	N/A -FEW MN -COM. Y MINERAL/SAP	45"	N/A	45"	PS
		8-26	R C MFSBK	FI, S, P, SEXP					0.275 GPD/SQFT TO 45"
		26-45	R C WFSBK	FR, SS, SP, SEXP					
		45	Quartz floater						
B 4	NS 10%	0-4	RB CL WFSBK	FR, SS, SP, SEXP	42" -FEW/COM SAP, FEW MICA -COM. YB, COM. MN, FEW/COM. CHR. 2 /POSSIBLE LITHO	48"	N/A	N/A	PS
		4-20	R C MFSBK	FI, S, P, SEXP					0.3 GPD/SQFT TO 42"
		20-42	R CL WFSBK	FR, SS, SP, SEXP					
		42-48	YR CL WFSBK	FI, SS, SP, SEXP					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	PS	PS
System Type(s)	GRAVITY 25% RED.	LP PPBPS
Site LTAR	0.275	0.275

OTHER FACTORS (.1946): NONE
SITE CLASSIFICATION (.1948): PS
EVALUATED BY: CS&SC, PLLC
OTHER(S) PRESENT: NONE

COMMENTS:

SOIL/SITE EVALUATION

(Continuation Sheet-Complete all field in full)

DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC HEALTH
ENVIRONMENTAL HEALTH SECTION
ON-SITE WATER PROTECTION BRANCH

PROPERTY ID #: _4637156723___
DATE OF EVALUATION: __7/27/16______
COUNTY: ____IREDELL__

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
B5	NS 8%	0-8	B CL WFSBK	FR, SS, SP, SEXP	N/A -COM. MN	48"	N/A	N/A	PS
		8-36	R C MFSBK	FI, S, P, SEXP					
		36-48	R CL WFSBK	FR, SS, SP, SEXP	-COM. Y MINERALS				0.275 GPD/SQFT

COMMENTS: